What is claimed is:

1. A method for designing a light guide in which light-scattering particles are contained in an optical medium so that light which enters the light guide from a first end face can propagate to a second end face while being scattered by the light-scattering particles, comprising the steps of:

(a) determining a desired value of a light-output efficiency of the light guide; and

(b) determining values of a scattering cross section $\Phi$ of each of said light-scattering particles, a density $N_p$ of the light-scattering particles in the optical medium, and a length $L_G$ of the optical medium in a light propagation direction so as to satisfy a relationship,

$$E_{out} = \exp\{-(\Phi \cdot Np \cdot L_G \cdot K_c)\} \cdot K_L,$$

where $K_c$ and $K_L$ are a correction coefficient and a loss coefficient of the light guide, respectively.

2. A light guide comprising:

an optical medium having first and second end faces and a length $L_G$ in a light propagation direction; and

light-scattering particles each having a scattering cross section $\Phi$ and being contained in said

optical medium with a density $N_p$ so that light which enters the light guide from said first end face can propagate to said second end face while being scattered by the light-scattering particles;

wherein a product of the scattering cross section $\Phi$, the density $N_p$, the length $L_G$, and a correction coefficient $K_c$ is less than or equal to 0.9.

3. A light guide according to claim 2, wherein said product is less than or equal to 0.4.

4. A light guide according to claim 2, wherein light incident in the optical medium is repeatedly reflected at the surfaces thereof except at the first and second end faces according to Snell's Law; the refractive index of the optical medium is designated as Nm, the refractive index of the ambient medium is designated as Ns, the incident angle is designated as $\theta m$, and the angle of refraction is designated as $\theta s$; and in the case that the optical medium does not contain the light scattering particles, if $Nm \cdot \sin\theta m = Ns \cdot \sin\theta s$, then the optical medium is formed to be of a shape so as to satisfy the condition, $\sin\theta s > 1$.

5. A light guide according to claim 3, wherein said light incident in the optical medium is repeatedly reflected at the surfaces thereof except at the first and second end faces according to Snell's Law; the refractive index of the optical medium is designated as

Nm, the refractive index of the ambient medium is designated as Ns, the incident angle is designated as $\theta m$, and the angle of refraction is designated as $\theta s$; and in the case that the optical medium does not contain the light scattering particles, if $Nm \cdot \sin\theta m = Ns \cdot \sin\theta s$, then the optical medium is formed to be of a shape so as to satisfy the condition, $\sin\theta s > 1$.

6. A light guide according to claim 2, wherein said light-scattering particles are non-magnetic conductive particles which behave in accordance with Mie's scattering theory.

7. A light guide according to claim 3, wherein said light-scattering particles are non-magnetic conductive particles which behave in accordance with Mie's scattering theory.

8. A light guide according to claim 4, wherein said light-scattering particles are non-magnetic conductive particles which behave in accordance with Mie's scattering theory.

9. A light guide according to claim 5, wherein said light-scattering particles are non-magnetic conductive particles which behave in accordance with Mie's scattering theory.

10. A light guide according to claim 2, wherein said density of said light-scattering particles gradually varies in the optical medium.

11. A light guide according to claim 3, wherein said density of said light-scattering particles gradually varies in the optical medium.

12. A light guide according to claim 4, wherein said density of said light-scattering particles gradually varies in the optical medium.

13. A light guide according to claim 5, wherein said density of said light-scattering particles gradually varies in the optical medium.

14. A light guide according to claim 6, wherein said density of said light-scattering particles gradually varies in the optical medium.

15. A light guide according to claim 2, wherein said optical medium is realized by combining a plurality of optical mediums.

16. A light guide according to claim 3, wherein said optical medium is realized by combining a plurality of optical mediums.

17. A light guide according to claim 4, wherein said optical medium is realized by combining a plurality of optical mediums.

18. A light guide according to claim 5, wherein said optical medium is realized by combining a plurality of optical mediums.

19. A light guide according to claim 6, wherein said optical medium is realized by combining a plurality

of optical mediums.

20. A light guide according to claim 10, wherein said optical medium is realized by combining a plurality of optical mediums.